



Renewable Energy

Renewable or Non-Renewable?

Non-Renewable

The majority of our electricity is made at Power Stations that use fossil fuels like coal and oil to generate the electricity. They are called non-renewable sources because you can't make anymore and they will eventually run out. Unfortunately burning fossil fuels produces greenhouse gases like carbon dioxide and methane which may cause global warming.

Renewable

The sun, wind, waves and heat from the earth are used to make electricity. They can be used again and again and should not run out. They are either carbon neutral or do not produce greenhouse gases so are much less harmful to the environment.

1. Coal – a fossil fuel formed millions of years ago when Earth was covered with oceans, trees and plants. When trees and plants died they formed a layer of peat, which over time become buried by more and more layers of clay, sand and rock. Over years the pressure of the extra layers turned the peat into the coal we put on our fires and fuel our power stations with today.

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2. Waves are created by the wind blowing across the sea and by the gravitational force of the moon. Wave power uses the energy of the waves to turn turbines that make electricity.

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3. Hydro Electricity – generated from running water from a river or dam. Its sent through a turbine, this moving water causes turbines to spin which generates power.

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4. Geothermal Power sounds complicated but it means using the heat from below the Earth's surface. The temperature of the earth increases towards the centre. The heat warms water which turns into steam that will spin turbines and generate electricity.

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5. Wind is made when the sun heats the earth and the area above land gets hotter than the area above water. The hot air above land rises upwards leaving an area of low pressure. Cooler air moves into this area of low pressure making wind which we can use to turn wind turbines and make electricity. Since wind comes and goes we cannot always rely on it to produce electricity when we want it.

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6. Biomass used the energy from plants and waste materials to make electricity, for example, wood, plants, crops and animal waste – cow manure is a source of biomass energy because it gives off methane gas. It can be burnt to make steam that turns turbines to make electricity.

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7. Nuclear Power made from radioactive uranium ore which occurs naturally in the ground, especially in America, Canada and Australia. Heat is created when uranium is split in a machine called a nuclear reactor. Heat boils water, creating steam that turns turbines to generate electricity.

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8. Solar power is energy that is created directly from the light or heat of the sun. Panels called photovoltaic cells are used to convert the suns energy into electricity.

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9. Tidal comes from the movement of the water in the sea. Tides happen twice a day, the flow of water created by the tides is used to turn generators that make electricity.

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10. Oil and gas are fossil fuels which were formed millions of years ago when tiny creatures call diatoms died and sank to the bottom of the oceans. As more layers of sediment covers the creatures they were crushed by the pressure and the carbon in their bodies turned to oil and gas.

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